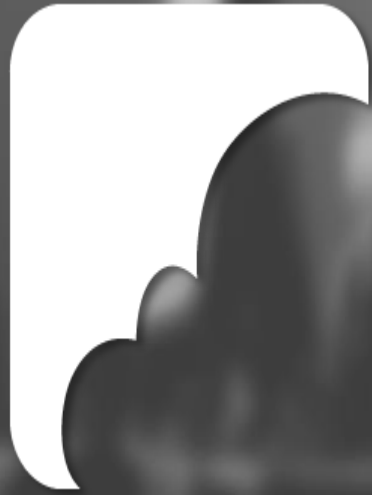


Cloud standards:
Ready for Prime Time



CSA Cloud Bytes

Agenda

15:00 – Welcome and introduction

**15:05 – IEEE P2301: Guide for Cloud
Portability and Interoperability
Profiles (CPIP)
John Messina, NIST**

**15:25 – ISO/IEC JTC1/SC38 ...
Peter Deussen**

15:45 – Q&A



Making CloudWATCH more service oriented

Needs


- ◆ Greater trust in cloud services
- ◆ More options for interoperability & portability
- ◆ Monitoring, management & transparency
- ◆ Integration, open APIs, open source
- ◆ Business cases and proof

Output

- ✓ SME guides & tools to the cloud
 - ✓ Legal tips on data protection
 - ✓ Recommendations for security & privacy certifications
 - ✓ Use cases & best practices
 - ✓ <http://www.cloudwatchhub.eu/tools-and-guides-smes-cloud>
- ✓ Testing cloud standards & interoperability
- ✓ Cloud standard profiles based on real user stories & analysis of 52 R&I initiatives
- ✓ Market facing portfolio of cloud services from EU R&I

- ◆ EU-funded FP7 project (CS action)
 - ◆ September 2013 – August 2015
- ◆ Main activity hub: <http://cloudwatchhub.eu>
- ◆ Partners
 - ◆ Trust-IT, UOXF, EGI.eu, CSA, Fraunhofer FOKUS, DIGITALEUROPE

CloudWATCH technical activities

- ◆ Use case collection & cluster analysis
 - ◆ Elicit and collate Cloud use cases
 - ◆ Produce Cloud requirements document
 - ◆ Cluster results from polling for prime needed Cloud characteristics
 - ◆ Common standards profiles
 - ◆ Ingest WP2's Cloud requirements document
 - ◆ Match with Cluster results and suitable Cloud-related standards
 - ◆ Develop profile specifications for clusters
- 
- Contributing to IEEE P2301
 - Facilitate seed clustering in EC projects
 - Guideline for profile development strategy

Summary of part 1

- ◆ Specific standards (OCCI, CDMI)
 - ◆ Define access interfaces
 - ◆ Define (some) domain information model
 - ◆ Different designs, different processes
- ◆ Standards application and deployment
 - ◆ Scientific domain: European Grid Infrastructure
 - ◆ Federation vs. syndication balance
 - ◆ Technical federation based on standards



John Messina
Senior Computer Scientist,
NIST

IEEE P2301 – CLOUD PROFILES

Guide for Cloud Portability and Interoperability Profiles (CPIP)



IEEE P2301 – Cloud Profiles

Guide for Cloud Portability and Interoperability Profiles (CPIP)

Chair: John Messina

CPIP Project: Purpose:

To develop a guide which advises cloud computing ecosystem participants (cloud vendors, service providers, and users) of standards-based choices in areas such as application interfaces, portability interfaces, management interfaces, interoperability interfaces, file formats, and operation conventions. This guide groups these choices into multiple logical profiles, which are organized to address different cloud personalities

IEEE P2301: Action Plan

- ◆ Develop a Set of Cloud Profiles (Roles/Functions)
- ◆ Identify a Set of Relevant Cloud Computing Standards
- ◆ Map the Intersection of Profiles and Standards
- ◆ Document Intersection as a Guidance Standard

IEEE P2301: Cloud Profiles

- ◆ Leveraged the ISO/IEC JTC1 SC38 17789 Document
- ◆ Top 3 Levels: Cloud Provider, Cloud Customer, Cloud Partner
- ◆ Each Top Level Role split into multiple sub roles based on functionality

Examples:

Cloud Service Provider:

- ◆ Inter-cloud provider/Manage Peer Cloud Services
- ◆ Cloud Service Deployment Manager/Define environment and process

Cloud Service Customer

- ◆ Cloud Service Administrator/Administer tenancies

Cloud Service Partner

- ◆ Cloud Service Broker/Acquire and Assess Customers

IEEE P2301: Cloud Standards

- ◆ Multiple organizations are tracking the work on existing Cloud Computing Standards
- ◆ Two Major activities include the ITU-T JCA and the NIST Standards Road-mapping Public Working Group
- ◆ Chose the NIST Standards Roadmap (NIST SP500 291) as the starting point for the standards

IEEE P2301: Intersection

- ◆ Created a sparse matrix showing the intersection of the Cloud Profiles and the Standards
- ◆ For each Profile a given standard is either listed as likely relevant, possibly relevant, or unlisted
- ◆ Currently soliciting input from experts using a Google Forms submission page:

<https://docs.google.com/forms/d/1qiIKMfmKdEi8PGzcVJyGg-x5Ci12YOMfe8BjMj15X6A/viewform?c=0&w=1>

IEEE P2301: Examples

◆ TOSCA Version 1.0

Cloud Role/Function	Likely	Possible
Cloud Service Customer [Cloud Service User/Use cloud Service]	X	
Cloud Service Customer [Cloud Service Administrator/Perform Service Trial]	X	
Cloud Service Customer [Cloud Service Administrator/Monitor service]	X	
Cloud Service Partner [Cloud Service Developer/Test Services]		X

IEEE P2301: Long Term Plans

- ◆ Created Create a standard from the sparse matrix (guidance standard)
- ◆ Find way to make this a living document with periodic updates or semi automatic through the use of a database
- ◆ Currently discussing options with IEEE Audit Committee



Peter Deussen
Project Manager,
Fraunhofer FOKUS

ISO/IEC JTC 1/SC 38

Cloud Computing and Distributed Platforms

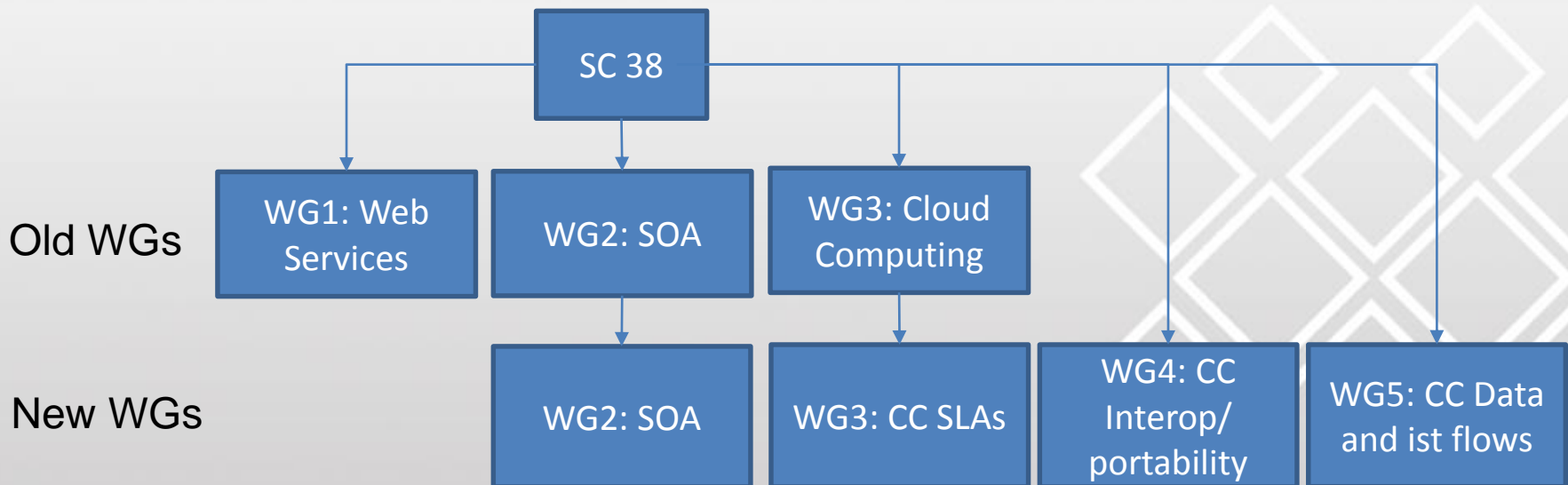


ISO/IEC JTC 1/SC 38

„Cloud Computing and Distributed Platforms“

Scope: Standardization for interoperable distributed application platforms and services including:

- ◆ (Web Services)
- ◆ Service Oriented Architecture (SOA)
- ◆ Cloud Computing



ISO/IEC JTC 1/SC 38

„Cloud Computing and Distributed Platforms“

- ◆ Established by Fall, 2009 JTC 1 Plenary (Distributed application services and platforms)
 - ◆ Initially 11 National bodies, now 15+ NBs
- ◆ CC related finalized standards
 - ◆ ISO/IEC 17788:2014 - Information technology - Cloud computing - Overview and vocabulary
 - ◆ ISO/IEC 17789:2014 - Information technology - Cloud computing - Reference architecture
- ◆ CC related work in progress
 - ◆ Service level agreement (SLA) framework and Technology -- Part 1: Overview and concepts
 - ◆ Service level agreement (SLA) framework and Technology -- Part 2: Metrics
 - ◆ Service level agreement (SLA) framework and Technology -- Part 3: Core requirements
 - ◆ Interoperability and Portability
 - ◆ Data and their Flow across Devices and Cloud Services
- ◆ Other
 - ◆ Standing Document 1 - Compendium of CC Usage Scenarios and Use Cases Functions
 - ◆ Standing Document 2 - Methodology and Guidelines for CC Usage Scenario and Use Case Analysis

ISO/IEC JTC 1/SC 38

„Cloud Computing and Distributed Platforms“

Standing Documents on Use Cases

- ◆ Living documents, basis for SC 38 work on cloud computing

- ◆ Standing Document 1:

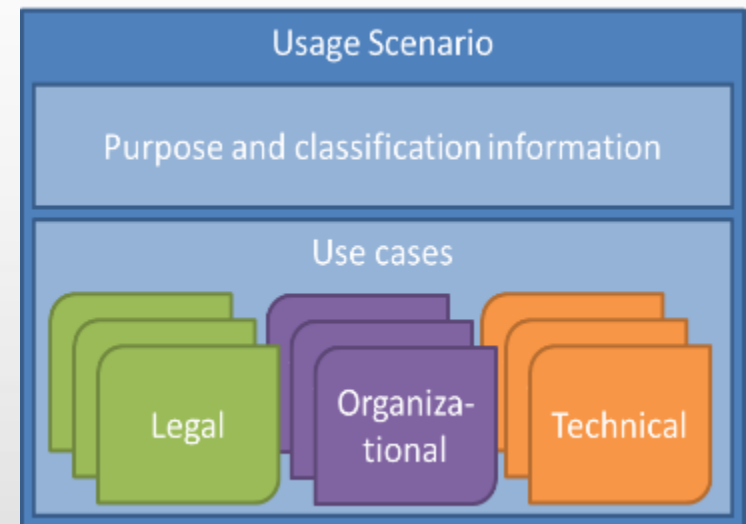
Methodology

- ◆ Use case concepts
- ◆ Presentation templates (aligned with CC reference architecture)
- ◆ Analysis methodology

- ◆ Standing Document 2:

Compendium

- ◆ More than 80 use cases



Avail. at:

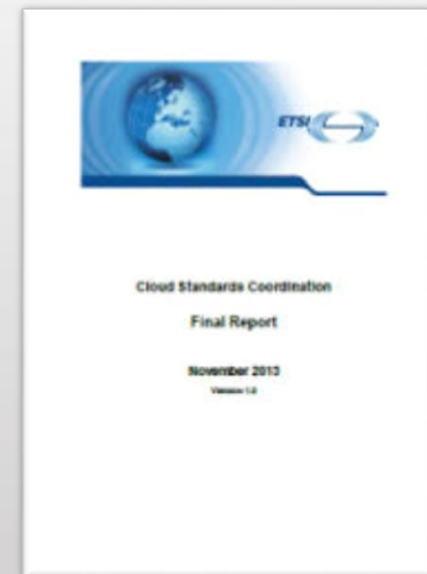
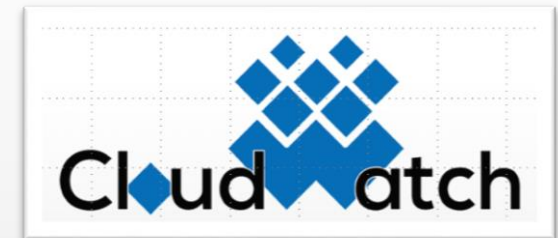
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ISO/IEC JTC 1/SC 38

„Cloud Computing and Distributed Platforms“

Standing Documents on Use Cases

- ◆ Used as input for
 - ◆ CloudWATCH project
(EC funded coordination and support action)
 - ◆ ETSI Cloud Standards Coordination (CSC)
 - ◆ EC initiative to understand the current state of standardisation



ISO/IEC JTC 1/SC 38

„Cloud Computing and Distributed Platforms“

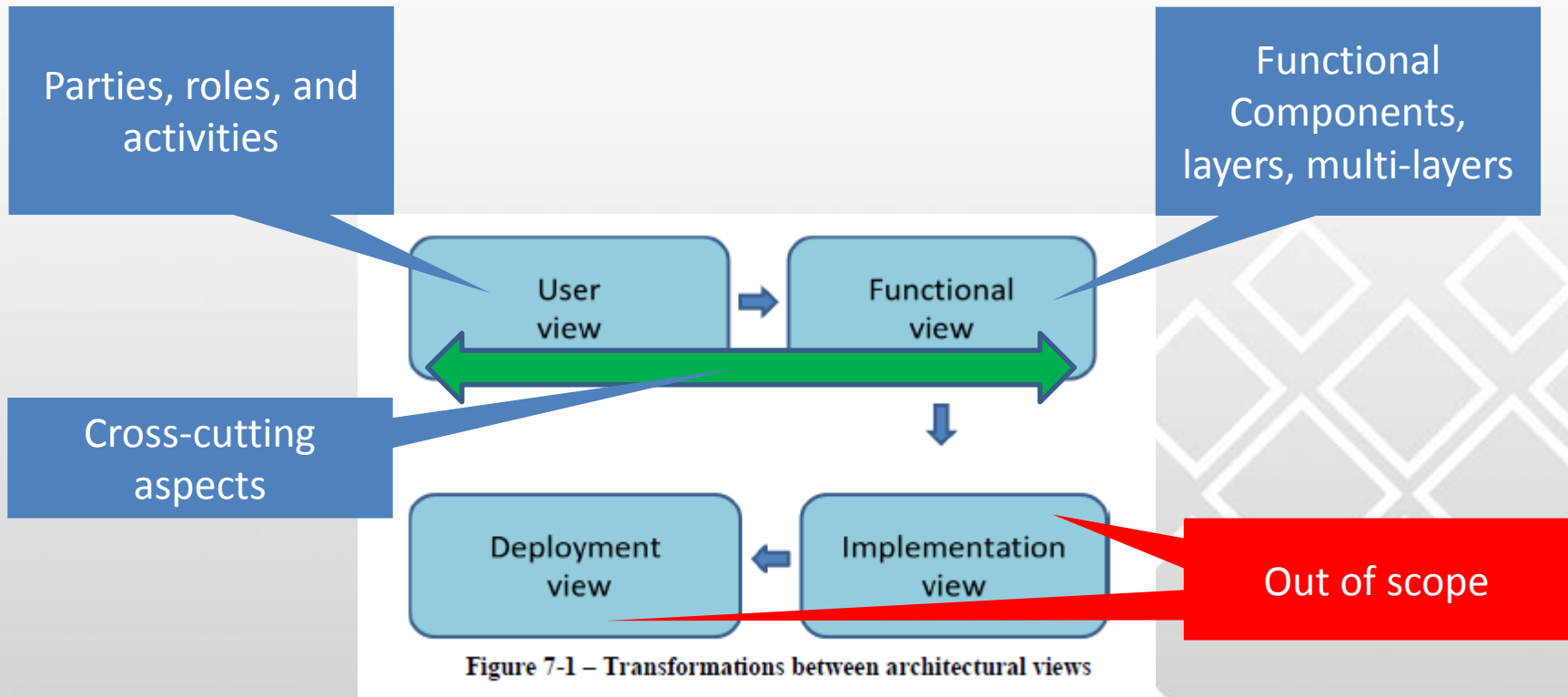
CC Concepts/Vocabulary and Reference Architecture

- ◆ Developed by a collaborative team
 - ◆ SC38 WG3 (Cloud Computing, at this time)
 - ◆ ITU-T SB 13
- ◆ Common text
- ◆ Finalized 2014

ISO/IEC JTC 1/SC 38

„Cloud Computing and Distributed Platforms“

CC Concepts/Vocabulary and Reference Architecture Views

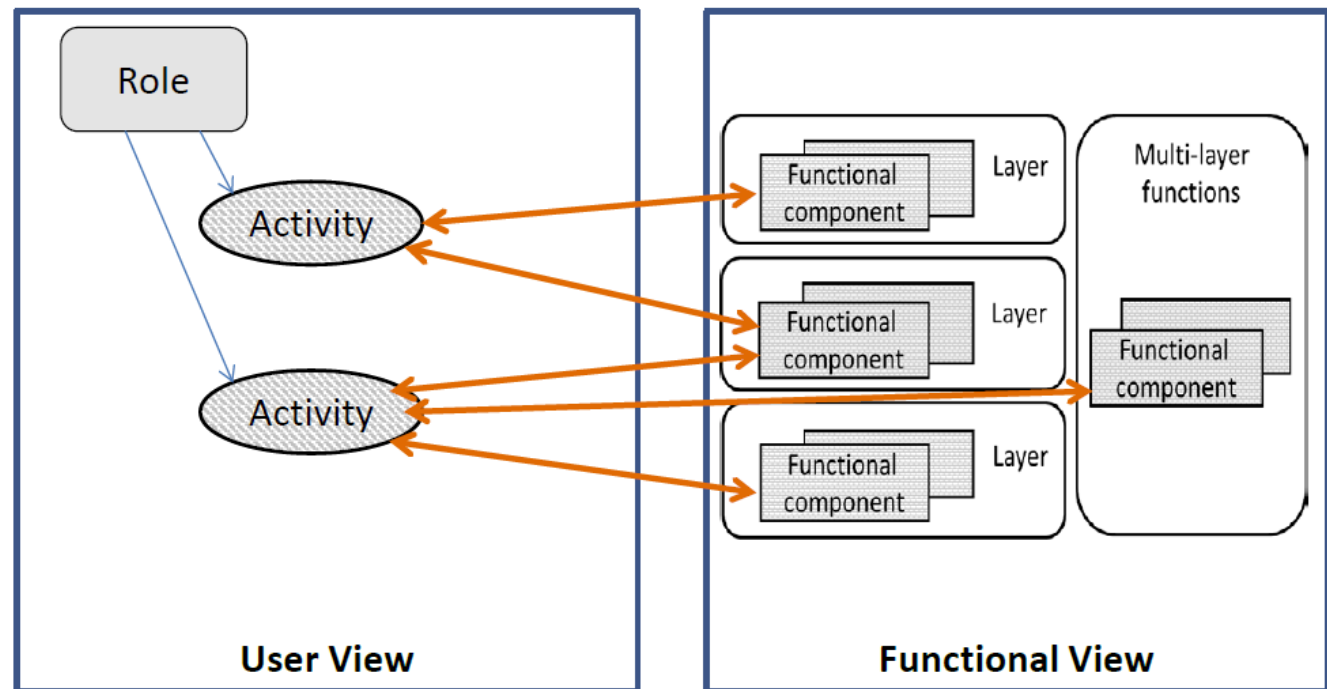


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„Cloud Computing and Distributed Platforms“

CC Concepts/Vocabulary and Reference Architecture

Relation
between
user and
functional
view

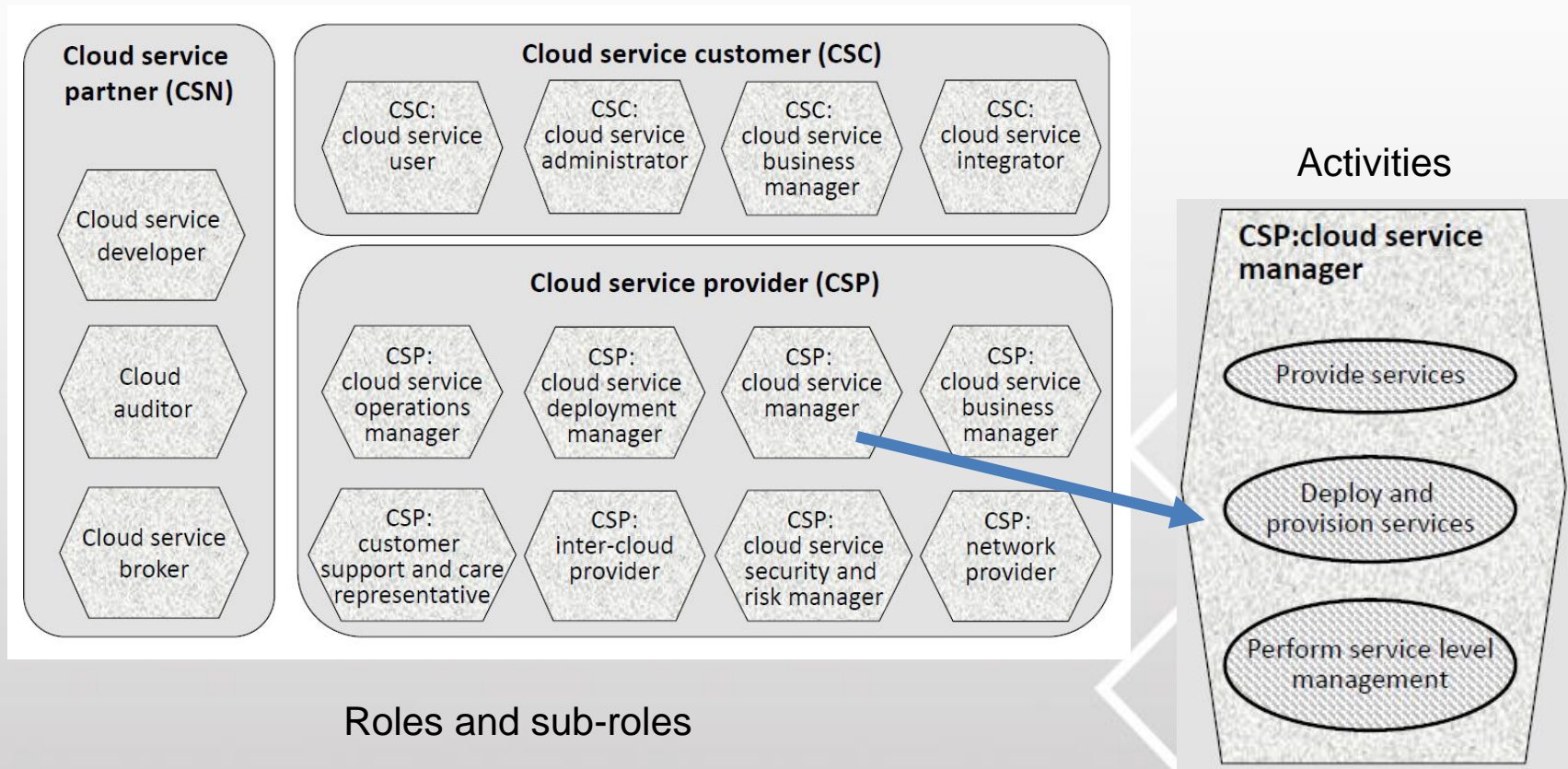


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CC Concepts/Vocabulary and Reference Architecture

User view: Roles and Activities

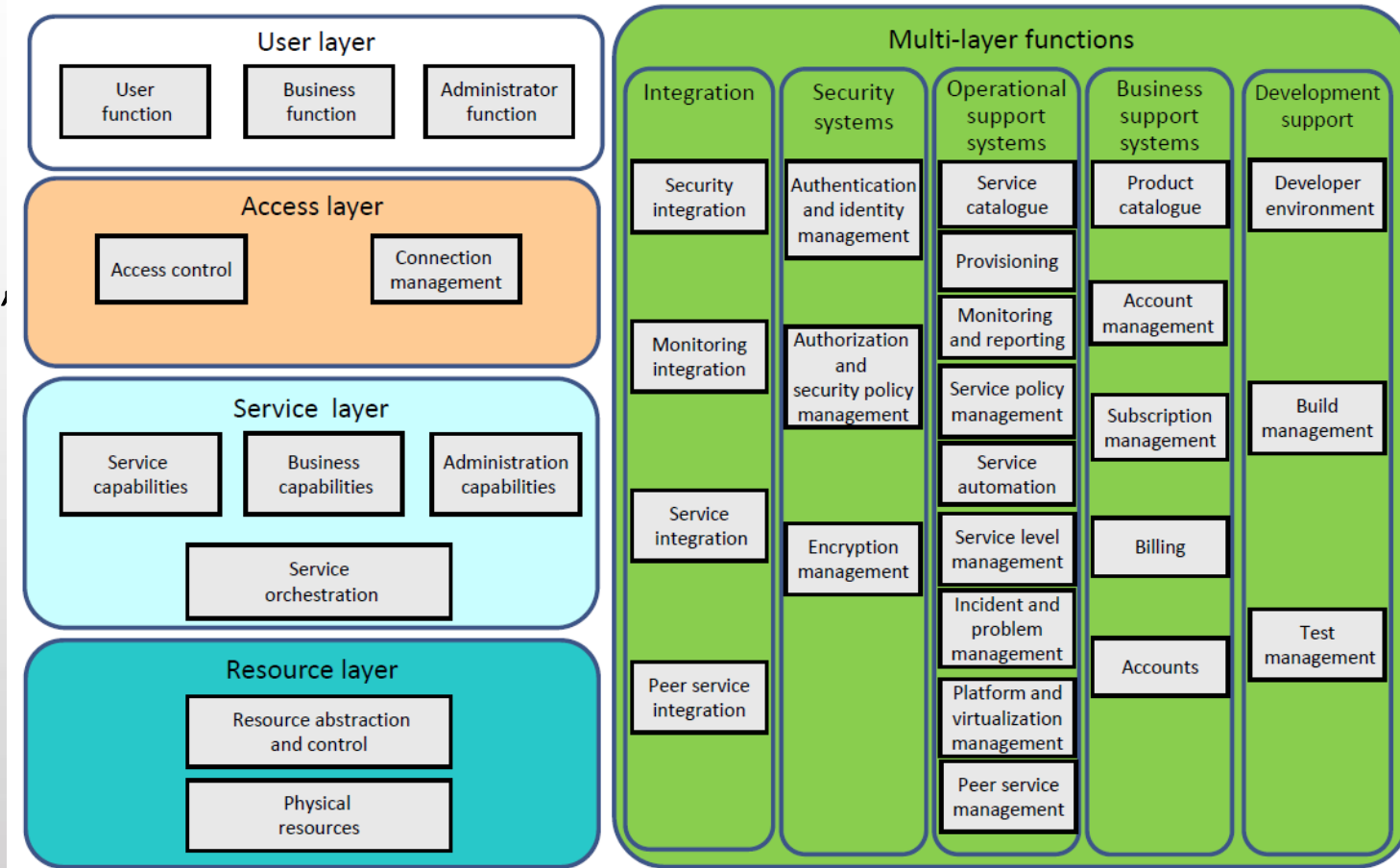


ISO/IEC JTC 1/SC 38

„Cloud Computing and Distributed Platforms“

CC Concepts/Vocabulary and Reference Architecture

Functional
view:
components,
layers,
multi-layers



ISO/IEC JTC 1/SC 38

„Cloud Computing and Distributed Platforms“

New Projects

Service Level Agreements

- ◆ Concepts
- ◆ Metrics
- ◆ Core requirements
- ◆ Security (SC 27 liaison)

Interoperability and Portability

- ◆ Concepts and definition
- ◆ Types of Interop/Portability
- ◆ Use cases

Data and their flows

- ◆ Classification of data types relevant to CC
- ◆ Operations on data
- ◆ Interleaving of data usage due to BYOD, IoT



THANK YOU!



See other CloudWATCH webinars and presentations:

www.CloudWATCHhub.eu/webinars



www.CloudWATCHhub.eu